

# AMINO POLYOL AMINE OXIDASE POLYNUCLEOTIDES AND RELATED POLYPEPTIDES AND METHODS OF USE

## 5 Abstract

The present invention provides polynucleotides and related polypeptides of the enzyme APAO isolated from *Exophiala spinifera* and *Rhinocladiella atrovirens*. Additionally, the polynucleotides encoding for the APAO enzyme can be used to transform plant cells normally susceptible to *Fusarium* or other toxin-producing fungus infection.

- 10 Plants can be regenerated from the transformed plant cells. Additionally, the present invention provides for expressing both APAO and a fumonisin esterase in a transgenic plant. In this way, a transgenic plant can be produced with the capability of degrading fumonisin, as well as with the capability of producing the degrading enzymes. In addition, the present invention provides methods for producing the APAO enzyme in both
- 15 prokaryotic and non-plant eukaryotic systems. Methods for detoxification in grain, grain processing, silage, food crops and in animal feed and rumen microbes are also disclosed.